



Monetary benefits of preventing childhood lead poisoning with lead-safe window replacement

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Abstract:

Previous estimates of childhood lead poisoning prevention benefits have quantified the present value of some health benefits, but not the costs of lead paint hazard control or the benefits associated with housing and energy markets. Because older housing with lead paint constitutes the main exposure source today in the US, we quantify health benefits, costs, market value benefits, energy savings, and net economic benefits of lead-safe window replacement (which includes paint stabilization and other measures). The benefit per resident child from improved lifetime earnings alone is \$21,195 in pre-1940 housing and \$8685 in 1940-59 housing (in 2005 dollars). Annual energy savings are \$130-486 per housing unit, with or without young resident children, with an associated increase in housing market value of \$5900-14,300 per housing unit, depending on home size and number of windows replaced. Net benefits are \$4490-5,629 for each housing unit built before 1940, and \$491-1629 for each unit built from 1940-1959, depending on home size and number of windows replaced. Lead-safe window replacement in all pre-1960 US housing would yield net benefits of at least \$67 billion, which does not include many other benefits. These other benefits, which are shown in this paper, include avoided Attention Deficit Hyperactivity Disorder, other medical costs of childhood lead exposure, avoided special education, and reduced crime and juvenile delinquency in later life. In addition, such a window replacement effort would reduce peak demand for electricity, carbon emissions from power plants, and associated long-term costs of climate change.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Indoor Environment, Other Exposure, Unspecified Exposure

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Developmental Effect

Developmental Effect: Cognitive/Neurological

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Mitigation

Model/Methodology:

type of model used or methodology development is a focus of resource

Cost/Economic

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type:

format or standard characteristic of resource

Policy/Opinion, Research Article

Timescale:

time period studied

Time Scale Unspecified